

Pressure Transducer Utilization Protocol

Pressure transducers are utilized to measure and record accurate water levels in wells. The transducer measures pressure of the water column above the unit and is placed at a known depth in the well and a conversion of pressure from water above transducer to feet of water column is made. If a pump is already installed in the well, then the transducers is often installed just above the installed depth of the pump. If the well is open, then the transducer should be installed a minimum of about 50 feet below the deepest water level expected. Once feet of water above transducer are known, the pressure data is converted to feet of water above transducer. Many models of transducers allow you to program that level into the data set so that it records either depth to water or water-level elevation. Transducers are generally rated by the maximum pressure in pounds per square inch (psi) that the units will accurately measure. The model and pressure rating of transducers can be matched to the depth of well and expected depth of water above transducer. Many units operate best at about 10- to 90-percent of their full pressure rating. So for example, if a unit is rated at 100 psi, then it operates best at 10 to 90 psi (23 to 208 feet submergence). Additionally, many of the models will record and operate at pressures above their maximum pressure rating. Check the specifications on your selected model of transducer. The following are some general guidelines for transducers:

- 1) Select and purchase all equipment best suited for monitoring needs (static water level and well depth). Generally, the equipment needed for the transducer includes pressure transducer, cable, adapters for computer and software. Other optional equipment also is available from the vendor.
- 2) Install software to computer(s) that will be used to interface with the transducers. Manufacturer provides you with software to run equipment along with installation instructions.
- 3) Install transducer onto cable making sure to follow manufactures instructions. The transducers are waterproof if properly installed.
- 4) Connect cable to computer allowing software to establish signal to transducer.
- 5) Input correct settings for data recording task at hand. Determine how often water level will be recorded. Many models allow for recording to range from seconds to days.
- 6) Measure the static water level from ground surface with calibrated electric line to get baseline information.
- 7) Install transducer into well at a depth deemed suitable to capture all anticipated water levels.
- 8) Secure transducer and cable that is installed in the well to keep unit stable. Each manufacturer has different protocol for securing all equipment in well hole for monitoring long periods of time. Follow manufactures instruction for this step.
- 9) After transducer has been recording water levels for some period, days to potentially a month, download data. Depending on data storage capacity of transducer and frequency of measurements, time between advisable data downloads will vary. Follow Step 4 above and manufactures guidelines for downloading the data.
- 10) Disconnect cable and repeat Step 7.

